

### ABSTRACT

Disclosed is a method for making amorphous spherical particles of zirconium titanate and crystalline spherical particles of zirconium titanate comprising the steps of mixing an aqueous solution of zirconium salt and an aqueous solution of titanium salt into a mixed solution having equal moles of zirconium and titanium and having a total salt concentration in the range from 0.01 M to about 0.5 M. A stearic dispersant and an organic solvent is added to the mixed salt solution, subjecting the zirconium salt and the titanium salt in the mixed solution to a coprecipitation reaction forming a solution containing amorphous spherical particles of zirconium titanate wherein the volume ratio of the organic solvent to aqueous part is in the range from 1 to 5. The solution of amorphous spherical particles is incubated in an oven at a temperature  $\leq 100^{\circ}\text{C}$  for a period of time  $\leq 24$  hours converting the amorphous particles to fine or ultrafine crystalline spherical particles of zirconium titanate.